

AMENDMENTS TO THE CLAIMS

Please amend the claims as set forth below in marked-up form.

1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Currently amended) An apparatus for ~~irradiating~~ablating a cornea of a patient's eye by irradiation of ~~a~~an ultraviolet laser beam onto the cornea, the apparatus comprising:

irradiation means having a laser source for emitting the laser beam and an irradiation optical system for irradiating ~~a~~the laser beam emitted from the laser source ~~onto an object to be processed~~the cornea;

an observation optical system having an objective lens, for observing the patient's eye;

input means for inputting corneal ablation data for ablating the ~~object to be processed~~cornea into a ~~predetermined~~desired corrected shape ~~by irradiation of the laser beam~~;

~~control~~calculation means for obtaining corneal ablation control data for the irradiation means based on the inputted corneal ablation data;

a fluorescent glass for calibration including a glass component and a rare-earth component, the fluorescent glass being disposed in an optical path of the irradiation optical system;

a fluorescence detecting optical system having an area sensor having a sensitivity to fluorescence, for obtaining an intensity distribution of the fluorescence emitted from a the fluorescent glass, ~~the fluorescence intensity being obtained when the laser beam is irradiated onto the fluorescent glass which emits the fluorescence by irradiation of the laser beam with an~~ ablation area of a size required for processing the object to be processed onto the fluorescent glass, the fluorescence detecting optical system detecting the fluorescence passed through the objective lens;

~~obtaining means for obtaining an irradiation intensity distribution of the laser beam in the ablation area based on the obtained fluorescence intensity;~~

mode setting means for setting a calibration mode in which the irradiation means is controlled to ablate a predetermined ablation area at a constant ablation depth so as to calibrate variation of irradiation intensity distribution of the laser beam; and

calibrating calibration means, when the calibration mode is set and the laser beam is irradiated by the irradiation means controlled to ablate the predetermined ablation area at the constant ablation depth, for calibrating at least one of the corneal ablation data and the corneal ablation control data for the irradiation means based on the obtained irradiation intensity distribution of the fluorescence obtained by the fluorescence detecting optical system.

10. (Cancelled)
11. (Cancelled)
12. (Cancelled)
13. (Cancelled)
14. (Cancelled)

15. (New) The apparatus according to claim 9, further comprising a light source for anterior-segment illumination which is turned off when the calibration mode is set.

16. (New) The apparatus according to claim 9, wherein the intensity distribution of the fluorescence is obtained by providing a differential processing to an image including the fluorescence and an image including no fluorescence.